Original Article

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# Daytime Napping and Nighttime Sleep During Pregnancy and Preterm Birth in Iran

**Farnaz Shaliha[1], Maryam Mozaffari[1], Faeze Ramezani[1], Hamideh Hajnasiri[2], Farnoosh Moafi[2]**

*[1]Student Research Committee, Qazvin University of Medical Sciences, Qazvin, Iran; [2]Social Determinants of Health Research Center, Research Institute for Prevention of Non-Communicable Diseases, Qazvin University of Medical Sciences, Qazvin, Iran*

**Objectives:** This study investigated the relationship between sleep quality during pregnancy and preterm birth.

**Methods:** This longitudinal study was conducted between August 2018 and May 2019. The participants were 150 pregnant women who had been referred to 7 healthcare centers in the city of Qazvin, Iran and met the inclusion criteria. The Petersburg Sleep Quality Index, the Epworth Sleepiness Scale, and 2 questions about daytime sleep status and a demographic questionnaire were administered at 14-18 weeks and 28-32 weeks of gestation. Data were analyzed using the Mann-Whitney test, the Fisher exact test, and univariate and multivariable logistic regression.

**Results:** In the present study, poor sleep quality affected 84.7% of the participants at 14-18 weeks and 93.3% at 28-32 weeks of gestation. The final model for preterm birth prediction incorporated age and the Petersburg Sleep Quality Index score in the second and third trimesters. Preterm birth increased by 14% with each unit increase in age. With each unit increase in the Petersburg Sleep Quality Index score in the second and third trimesters, preterm birth increased by 42% and 28%, respectively, but the *p*-values of these factors were not significant.

**Conclusions:** Although a significant percentage of pregnant women had poor sleep quality, no significant relationship was found between sleep quality during pregnancy and preterm birth.

**Key words:** Pregnancy, Premature birth, Sleep, Iran

## INTRODUCTION

Preterm birth, which is defined as prenatal birth before 37 weeks of gestation, is the leading cause of infant mortality and is associated with many complications [1]. Each year, approximately 15 million babies are born prematurely worldwide [2]. The preterm birth rate in the United States has been on the rise since 2014, reaching 9.93% of births in 2017 [3]. In developing countries, especially in South Asia and sub-Saharan Africa, the preterm birth rate is estimated to be more than 15% [4]. Approximately 90% of preterm deliveries occur in developing countries, of which 85% are reported in Asia and Africa [5]. The preterm birth rate in Iran is estimated to be between 5.40% and 19.85%, indicating that preterm birth is a relatively common problem [6].

The etiological, epidemiological, and clinical nature of preterm birth in many cases is unidentified and idiopathic. Researchers have identified preterm birth as a multifactorial complication and have attributed it to individual, social, environ-

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**Corresponding author:** Farnoosh Moafi
Social Determinants of Health Research Center, Research Institute for Prevention of Non-Communicable Diseases, Qazvin University of Medical Sciences, P.O. Box 34199-15315, Qazvin, Iran
E-mail: f.moafi.sbmu@gmail.com



 